



# UNITED STATES PATENT AND TRADEMARK OFFICE

elh

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/770,792	12/19/1996	JUN KOYAMA	07977/105001	3931
26171	7590	04/29/2005	EXAMINER	
FISH & RICHARDSON P.C. 1425 K STREET, N.W. 11TH FLOOR WASHINGTON, DC 20005-3500			NGO, HUYEN LE	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 04/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

08/770,792

Applicant(s)

KOYAMA ET AL.

Examiner

Julie-Huyen L. Ngo

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 4, 6, 13, 14, 17, 21-25, 30, 31, 35, 36, 40, 41, 44 and 61-64 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4, 6, 13, 14, 17, 21-25, 30, 31, 35, 36, 40, 41, 44 and 61-64 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____.  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                                    |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 14, 2005 has been entered.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 4, 6, 13, 14, 17, 21-25, 30, 31, 35, 36, 40, 41 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawatsubashi et al. (U.S. 5,148,301).

Since the method claims are just the steps of forming the elements of the device, the method claims would have been obvious in view of the device. Therefore, the method claims are treated below with the corresponding device claims.

Sawatsubashi et al. disclose (Cols. 4-6 and Figures 3-5) an active matrix liquid crystal display (LCD) device comprising all the features recited in the above claims including:

(Claim 17)

- at least one liquid crystal panel having at least a first side, a second side, a third side and a fourth side

Art Unit: 2871

- a plurality of pixel TFTs (104) arranged in rows and columns over a TFT substrate (101) and arrayed in a matrix;
- a counter substrate (102) located opposite to said TFT substrate;
- a layer of a liquid crystal material (109) provided between said TFT substrate (101) and said counter substrate (102);

Sawatsubashi teaches (col. 4, line 58 - col. 5, line 60) forming driving circuits 112/113 for supplying control signals, data signal and the like (col. 5, lines 9-17).

Sawatsubashi also discloses that these control circuits comprises an integrated circuit, which has a plurality of driver thin film transistors (col. 4, lines 58-60), data latch circuit 112a having shift registers or the like, data signal generating circuit 112b, circulating memory circuit 113a, and a gate signal generating circuit 113b. Hence, these control circuits obviously are the control circuit chips, and are the control circuits for controlling said driver TFTs (col. 4, line 58 to col. 5 lines 54). Further more, these control circuit chips are sealed in the sealing material (108), and are provided over the TFT substrate (101, see figure 4).

Therefore, Sawatsubashi LCD would obviously have:

- a driver TFT (col. 4, lines 58-60) provided over said TFT substrate (101);  
and

(Claims 17, 21-25)

- a control circuit (112/113) comprising a control circuit chip, which is sealed in said sealing material (108), said control circuit provided over said TFT substrate (see figs. 3-4) for controlling the driver TFT (col. 4, line 58 - col.

Art Unit: 2871

6, line 21). Note that Sawatsubashi also teaches in (col. 8, lines 22-25) that "the overall driving circuits maybe placed in or within the portions of the width of the seal member 108 by fully widen the seal member 108". Therefore, the control circuits having the control chips are can be completely IN or SEALED in the seal material 108.

Wherein:

(Claims 21 and 23)

- a bus line (Gm/Dn) provided over said TFT substrate and connected with at least one of said pixel TFTs

(Claims 22, 23 and 24)

- a sealing material (108) sealing around said liquid crystal material (109) and provided between said TFT substrate (101) and said counter substrate (102), said sealing material provided outside at least said pixel TFTs;

(Claims 24 and 25)

- The TFT and counter substrates of said LCD were cut outside said sealing material 108 having said control circuit 112/113 sealed in said sealing material.

Claims 61-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted Prior Art (APA) in view of Kamoi et al (JP 61029821A published in 2/10/1986, submitted in Applicants' IDS paper no. 42).

APA discloses (p.2, lines 14-23, Figs 2-6) a conventional active matrix liquid crystal display comprising all the elements recited in claims 61-64 and 69-72 exclusive of:

- a non-conductive or weakly conductive material applied to the first side edge, the second side edge, and the third side edge of the TFT substrate (505) and the counter substrate (501) of said liquid crystal panel

Wherein said non-conductive or weakly conductive material is provided on an outer side of the sealing material (502), and is not applied to the fourth side edges of the TFT substrate and said counter substrate.

Kamoi et al. teach (see Fig. 5b) applying a second sealing layer 6 outside of the first sealing layer 5 to seal the sides edges of the substrates to prevent any adverse influences that are exerted to the liquid crystal material and orientation films. Doing so would prevent the leakage of liquid crystal material and obviated the generation of defective orientation. As a result, the resistance to high temperature and high humidity can be improved, and the reliability of a display device is improved.

Therefore, it would have been obvious for one of ordinary skill in the art to provide a non-conductive or weakly conductive material to the first, second, and third side edges of the TFT and counter substrates of APA device for completely sealing said the side edges of the substrate to prevent the leakage of the liquid crystal material and any contaminate to the liquid crystal material, and to obviate the generation of defective orientation, as taught by Kamoi et al. Doing so would improve the resistance to high temperature and high humidity, and improve the reliability of APA LCD device. Note that

Art Unit: 2871

the non-conductive or weakly conductive material is not applied to the fourth side edges of the TFT substrate and said counter substrate.

Thus claims 61-64 would have been obvious over Applicant's admitted Prior Art (APA) in view of Kamoi et al. as applied above.

### ***Response to Arguments***

Applicant's arguments filed February 14, 2005 have been fully considered but they are not persuasive.

#### **Applicants' arguments are following:**

1) Sawatsubashi fails to describe or suggest an active matrix liquid crystal display that includes a control circuit having a control circuit chip sealed in the sealing material, where the control circuit is provided over the TFT substrate for controlling the driver TFT. Rather, Sawatsubashi illustrates in Fig. 4 that the driving circuit 113 is instead covered by an alignment film 106 and it is not sealed in the seal member 108.

2) Independent claims 17 and 21-25 recite that the control circuit chip is sealed in the sealing material, meaning that the complete control circuit chip is sealed within the sealing material as illustrated, for example, in application Figure 9.

3) APA, Inoue, McClelland, Sasaki, and Kamoi, either alone or in combination, fail to describe or suggest *that a nonconductive material is applied to a first side edge, a second side edge, and a third side edge of the TFT substrate and counter substrate of the liquid crystal panel and is not applied to a fourth side edge of the liquid crystal panel.*

**Examiner's responses are following:**

1) Applicant is to note that although only partial of the control circuits 112/113 are sealed in the sealing material 108 as shown in figure 4, Sawatsubashi also teaches in (col. 8, lines 22-25) that "the overall driving circuits maybe placed in or within the portions of the width of the seal member 108 by fully widen the seal member 108". Therefore, the control circuits having the control chips can be completely IN or SEALED in the seal material 108. Thus, Sawatsubashi does teach (figures 3&4 and col. 4, line 58 - col. 6, line 21 and col. 8, lines 22-25) that the driving circuits 112/113 or the control circuits having the control circuit chips are sealed in the sealing material (108), and are provided over the TFT substrate (101) for controlling the driver TFT.

2) With respect to Applicant's interpretation of the meaning of the language recited in claims 17 and 21-25, i.e., "the complete control circuit is sealed within the sealing material", Applicant is to note that such limitation was neither recited in the amended claim 17 nor in the rejected claim. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

3) Applicant is to note that APA has been applied as a primary reference, while Inoue, McClelland, Sasaki and Kamoi et al have been applied as secondary references and as evidences to show that it is well known in the art to apply a nonconductive or



Art Unit: 2871

weakly conductive material to side edges of the substrates for preventing contaminate to the liquid crystal material and leakage of the liquid crystal material. However, only Kamoi et al reference is applied in this rejection to show that it would have been obvious for one of ordinary skill in the art to apply a nonconductive or weakly conductive material to the first, second and third side edges of the TFT and counter substrates of APA device for preventing contaminate to the liquid crystal material and leakage of the liquid crystal material as set forth above in the rejection.

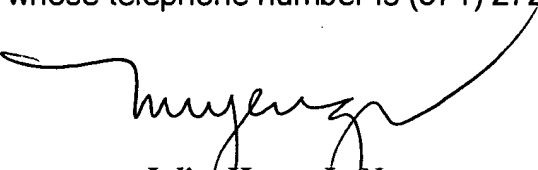
**Contact Information**

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Julie-Huyen L. Ngo whose telephone number is (571) 272-2295. The Examiner can normally be reached on T-Friday.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Mr. Robert H. Kim can be reached at (571) 272-2293.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1562.

April 26, 2005



**Julie Huyen L. Ngo**  
**Primary Patent Examiner**  
Art Unit 2871